Center Innovation Fund: LaRC CIF

Nitric oxide Infrared Cooling Emissions CubeSat (NICEcube)

Completed Technology Project (2017 - 2018)

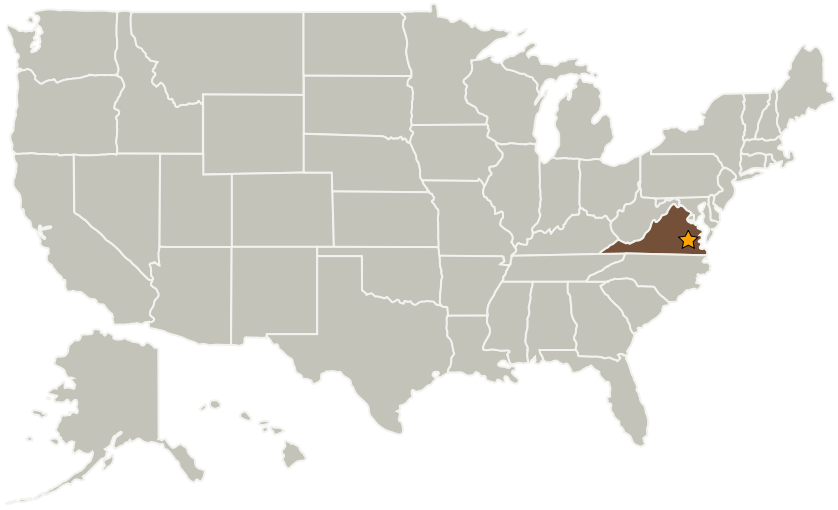
Project Introduction

Design a low-cost, cube-sat class infrared radiometer to observe and provide real-time upper atmosphere radiative cooling data for input to nowcasts of space weather. Draw on advances in detector arrays, mini cryo-coolers, on-board processing, and CubeSat buses. Solicit industry partner to develop instrument design for proposal to NASA, DARPA, etc.

Anticipated Benefits

Benefits the NASA Heliophysics science missions

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Langley Research Center(LaRC)	Lead Organization	NASA Center	Hampton, Virginia
Johns Hopkins University Applied Physics Laboratory(JHU/APL)	Supporting Organization	R&D Center	Laurel, Maryland

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Primary U.S. Work Locations
Virginia

Project Website:

https://www.nasa.gov/directorates/spacetech/innovation_fund/index.html#.VC

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Langley Research Center (LaRC)

Responsible Program:

Center Innovation Fund: LaRC CIF

Project Management

Program Director:

Michael R Lapointe

Program Manager:

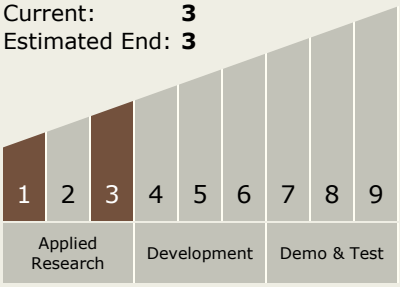
Julie A Williams-byrd

Principal Investigator:

Martin G Mlynczak

Technology Maturity (TRL)

Start: **1**
Current: **3**
Estimated End: **3**



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Technology Areas

Primary:

- TX14 Thermal Management Systems
  - TX14.1 Cryogenic Systems
    - TX14.1.3 Thermal Conditioning for Sensors, Instruments, and High Efficiency Electric Motors

Target Destination

Earth